OSC ON-SCENE COORDINATOR

BEAVER CREEK BRIDGE CRUDE OIL SPILL

GLASGOW, KY - REGION IV

Site Contact:

Perry Gaughan
OSC
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Rte 1297
Glasgow, KY 42142
response.epa.gov/beavercreekcrude (https://response.epa.gov/beavercreekcrude)

Latitude: 36.9914130
Longitude: -85.9861300
NRC#: 1095757

NRC# 1095757 Friday, September 19th, 2014 KYDEP requested assistance in assessing the source of crude oil observed in Beaver Creek, Glasgow, KY, The oil in the creek is within 900 feet of known abandoned oil wells. OSC Gaughan mobilized to the scene with KYDEP to assess the creek and nearby wells.

Sunday, Sept 21st - The crude oil spill is emanating from a 100 yard section of the left descending bank of Beaver Creek three miles west of Glasgow, Kentucky. The oil saturated section of creek is located on a 50 acre farm owned by a resident of Glasgow.

Friday, October 3rd - One unmarked abandoned oil well was uncovered 80 feet from the impacted creek bank and ERRs proceeded to subcontract a well service company to plug the well. After three days of drilling through an initial wood plug and cement plugs, a cast iron bridge plug was set at 140 feet in the well casing and the well was grouted with 200 sacks of cement.

Tuesday, Jan 20th, 2015 - crude oil continued to impact Beaver Creek and test trenching operations indicated the source was still the abandoned well 80 feet from the creek. The OSC obtained additional funds from USCG NPFC in late December and began drilling out the previous cement plug. Operations are centered around removing what appears to be 2" production tubing from 200-600 feet and placing a new bridge plug at 600 feet and grouting the well to land surface.

For additional information, visit the **Pollution/Situation Report** (Pol/Sitreps) (sitrep_profile.aspx?site_id=9522) section.

RESOURCES

Notices (bulletins_list.aspx?site_id=9522)

None for this site

Images (image_list.aspx?site_id=9522)

(image_zoom.aspx?site_id=9522&counter=234531)

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(image_zoom.aspx?site_id=9522&counter=228730)

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Documents (doc_list.aspx?site_id=9522)

None for this site

Pol/SitReps (sitrep_list.aspx?site_id=9522)

POLREP - 17 (sitrep_profile.aspx?site_id=9522&counter=23072)
POLREP - 16 (sitrep_profile.aspx?site_id=9522&counter=23058)
POLREP - 15 (sitrep_profile.aspx?site_id=9522&counter=23056)
List All... (sitrep_list.aspx?site_id=9522)

Contacts (contact_list.aspx?site_id=9522)

OSC
harper.greg@epa.gov (mailto:harper.greg@epa.gov)
List All... (contact_list.aspx?site_id=9522)

Links (links_list.aspx?site_id=9522)

None for this site

2019 - EPA OSC Response

OSC ON-SCENE COORDINATOR

BEAVER CREEK BRIDGE CRUDE OIL SPILL

Thumbnails (image_list.aspx?site_id=9522&category=) | **List View (image_listview.aspx?site_id=9522&category=)** | Photo Log (photo_log.aspx?site_id=9522&category=)

All Images [16]

CATEGORIES

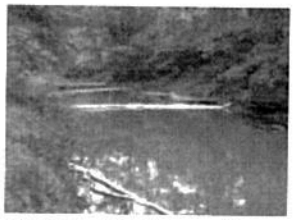
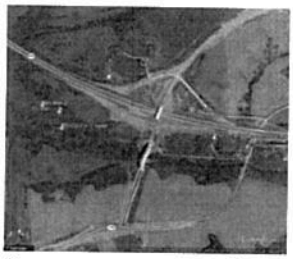
All Images

Site Photo

Page Size ALL

Image	Description	Category	Date	Tags
 (image_zoom.aspx?site_id=9522&counter=234531&category=&ReturnURL=image_listview.aspx)	"Hog trough" casing guide fabricated to guide 5 1/2" casing string past well obstruction at 30 feet.	Site Photo	1/19/2015	
 (image_zoom.aspx?site_id=9522&counter=231069&category=&ReturnURL=image_listview.aspx)	Crude oil along left bank of Beaver Creek post well plugging operations.	Site Photo	11/4/2014	
 (image_zoom.aspx?site_id=9522&counter=231068&category=&ReturnURL=image_listview.aspx)	Crude oil along left descending bank post plugging.	Site Photo	11/4/2014	

 (image_zoom.aspx?site_id=9522&counter=231067&category=&ReturnURL=image_listview.aspx)	Post well plugging photo of creek bank	Site Photo	11/4/2014
 (image_zoom.aspx?site_id=9522&counter=228731&category=&ReturnURL=image_listview.aspx)	Impression block dropped on Thurs Oct 2nd showing impression of 2" coupling in upper right corner of wax block.	Site Photo	10/2/2014
 (image_zoom.aspx?site_id=9522&counter=228730&category=&ReturnURL=image_listview.aspx)	View of impacted creek bank and boom placement along first 100 yards of Beaver Creek.	Site Photo	10/1/2014
 (image_zoom.aspx?site_id=9522&counter=228729&category=&ReturnURL=image_listview.aspx)	Setting of cast iron bridge plug into 7" casing at approx 150 feet.	Site Photo	10/2/2014
 (image_zoom.aspx?site_id=9522&counter=228309&category=&ReturnURL=image_listview.aspx)	Absorbent boom near impacted creek bank.	Site Photo	9/27/2014

 (image_zoom.aspx?site_id=9522&counter=228308&category=&ReturnURL=image_listview.aspx)	Oil sheen continues flowing from 100 yard stretch of left descending bank.	Site Photo	9/27/2014
 (image_zoom.aspx?site_id=9522&counter=228307&category=&ReturnURL=image_listview.aspx)	Additional hard boom placed prior to oil well plugging operations.	Site Photo	9/26/2014
 (image_zoom.aspx?site_id=9522&counter=227815&category=&ReturnURL=image_listview.aspx)	Image of spill area including recent construction interchange on Louie B. Nunn Expressway	Site Photo	9/19/2014
 (image_zoom.aspx?site_id=9522&counter=227814&category=&ReturnURL=image_listview.aspx)	Pocket of crude along left bank of creek.	Site Photo	9/19/2014
 (image_zoom.aspx?site_id=9522&counter=227813&category=&ReturnURL=image_listview.aspx)	Sheen visible from Beaver Creek Bridge	Site Photo	9/20/2014

 (image_zoom.aspx?site_id=9522&counter=227812&category=&ReturnURL=image_listview.aspx)	Classic rainbow sheen visible from crude oil bubbling to surface along left descending bank of creek.	Site Photo	9/19/2014
 (image_zoom.aspx?site_id=9522&counter=227811&category=&ReturnURL=image_listview.aspx)	Placement of boom near point source along left descending bank one half mile upgradient of Beaver Creek Bridge.	Site Photo	9/19/2014
 (image_zoom.aspx?site_id=9522&counter=227810&category=&ReturnURL=image_listview.aspx)	Beaver Creek Spill - placement of boom on Friday Sept 19th	Site Photo	9/19/2014

View Slideshow (/site/GetSlideShowImage.ashx?counter=234531&unique=636916304124563261)

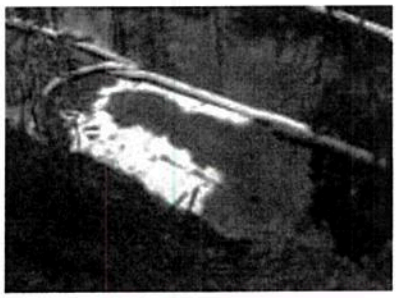
2019 - EPA OSC Response

Beaver Creek Bridge Crude Oil Spill

Photo Log

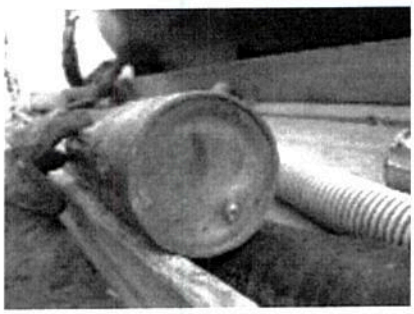
Description: "Hog trough" casing guide fabricated to guide 5 1/2" casing string past well obstruction at 30 feet.
Category: Site Photo
Latitude: 36.991413
Date Taken: 1/19/2015
Longitude: -85.98613
Tags:

Description: Crude oil along left bank of Beaver Creek post well plugging operations.
Category: Site Photo
Latitude: 36.991413
Date Taken: 11/4/2014
Longitude: -85.98613
Tags:



Description: Crude oil along left descending bank post plugging.
Category: Site Photo
Latitude: 36.991413
Date Taken: 11/4/2014
Longitude: -85.98613
Tags:

Description: Post well plugging photo of creek bank
Category: Site Photo
Latitude: 36.991413
Date Taken: 11/4/2014
Longitude: -85.98613
Tags:



Description: Impression block dropped on Thurs Oct 2nd showing impression of 2" coupling in upper right corner of wax block.
Category: Site Photo
Latitude: 36.991413
Date Taken: 10/2/2014
Longitude: -85.98613
Tags:

Beaver Creek Bridge Crude Oil Spill

Photo Log

Description: View of impacted creek bank and boom placement along first 100 yards of Beaver Creek.
Category: Site Photo
Latitude: 36.991413
Date Taken: 10/1/2014
Longitude: -85.98613
Tags:

Description: Setting of cast iron bridge plug into 7" casing at approx 150 feet.
Category: Site Photo
Latitude: 36.991413
Date Taken: 10/2/2014
Longitude: -85.98613
Tags:

Description: Absorbent boom near impacted creek bank.
Category: Site Photo
Latitude: 36.991413
Date Taken: 9/27/2014
Longitude: -85.98613
Tags:

Description: Oil sheen continues flowing from 100 yard stretch of left descending bank.
Category: Site Photo
Latitude: 36.991413
Date Taken: 9/27/2014
Longitude: -85.98613
Tags:

Description: Additional hard boom placed prior to oil well plugging operations.
Category: Site Photo
Latitude: 36.991413
Date Taken: 9/26/2014
Longitude: -85.98613
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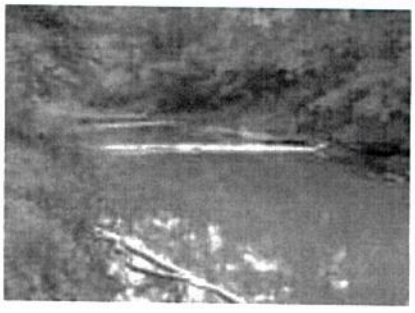
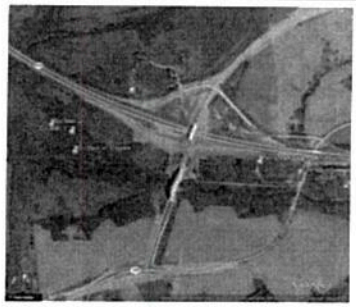


Beaver Creek Bridge Crude Oil Spill

Photo Log

Description: Image of spill area including recent construction interchange on Louie B. Nunn Expressway
Category: Site Photo
Latitude: 36.9958839
Date Taken: 9/19/2014
Longitude: -85.9119215
Tags:

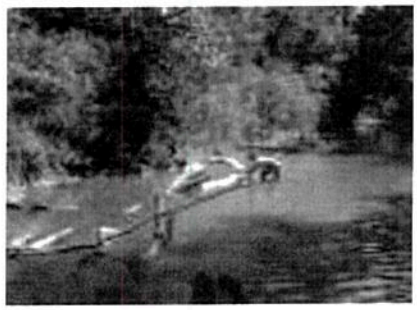


Description: Pocket of crude along left bank of creek.
Category: Site Photo
Latitude: 36.9958839
Date Taken: 9/19/2014
Longitude: -85.9119215
Tags:

Description: Sheen visible from Beaver Creek Bridge
Category: Site Photo
Latitude: 36.9958839
Date Taken: 9/20/2014
Longitude: -85.9119215
Tags:

Description: Classic rainbow sheen visible from crude oil bubbling to surface along left descending bank of creek.
Category: Site Photo
Latitude: 36.9958839
Date Taken: 9/19/2014
Longitude: -85.9119215
Tags:

Description: Placement of boom near point source along left descending bank one half mile upgradient of Beaver Creek Bridge.
Category: Site Photo
Latitude: 36.9958839
Date Taken: 9/19/2014
Longitude: -85.9119215
Tags:



Beaver Creek Bridge Crude Oil Spill

Photo Log

Description: Beaver Creek Spill - placement of boom on Friday Sept 19th

Category: Site Photo

Latitude: 36.9958839

Date Taken: 9/19/2014

Longitude: -85.9119215

Tags:

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #1**
Initial Polrep - Beaver Creek Clean Up Initiated
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 9/20/2014
Reporting Period: Sept 19 through Sept 22nd, 2014

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category
Emergency Response under the Oil Pollution Act.

1.1.2 Site Description
The Site is approximately a one mile stretch of Beaver Creek four miles west of Glasgow, Kentucky near the Louie B Nunn Expressway.

1.1.2.1 Location
The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat
An unknown source of crude oil has saturated and impacted groundwater flowing into Beaver Creek on the southern edge of the 50 acre farm. The source appears to be one of three abandoned oil wells along the farm flood plain adjacent to Beaver Creek.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Friday September 19th, 2014

At Region 4 phone duty's request, the OSC met with Kentucky Dept of Environmental Protection (KDEP) Todd Johnston and Curtis McKenzie on Friday, Sep 19th to inspect areas of Beaver Creek which was impacted by crude oil. The crude oil spill is emanating from a 100 yard section of the left descending bank of Beaver Creek four miles west of Glasgow, Kentucky. The oil saturated section of creek is located on a 50 acre farm owned by a resident of Glasgow. After gaining access from the property owner Friday evening, the OSC issued a 50K task order to ERRs (CMC Inc.) and mobilized a crew early Saturday morning.

Saturday, Sept 20th

Absorbent boom previously placed by KDEP was switched out and additional absorbent boom and hard boom was placed along the 100 yard stretch of creek. In an effort to identify a point source, the OSC met with the property owner Saturday morning and two abandoned oil wells were found along the tree line of the creek flood plain. One well is approximately 300 yards from the spill location but there is no evidence of a crude oil spill along the surface. No information is currently available on when the two wells were plugged and the local Kentucky Oil and Gas representative is expected on site early Monday morning with KDEP officials. The OSC is proceeding under the current assumption that one of the wells was not properly plugged and has been leaking crude oil to subsurface groundwater for an extended period of time.

Sunday, Sept 21st

ERRs continued switching out absorbent boom and placing additional hard/absorbent boom at key locations along a one half mile stretch of Beaver Creek immediately south of the new interchange construction. The OSC and property owner continued surveying the flood plain for additional abandoned well locations in an effort to identify the point source of the spill.

Monday, Sept 22nd

The OSC met with Kentucky Oil and Gas inspector Ron Norris to inspect the spill area. Mr Norris indicated that hundreds of wells were drilled along a fault line referred to as the "Leeper Line" in this area of Kentucky and that the area is peppered with abandoned wells. From his records, a third well should be located within 200 feet of the spill location of the creek. A large amount of crude continues to flow from the bank edge at a rate approaching 10-20 gallons per hour. His information coincided with an oil stained area found on Saturday morning by the OSC and property owner. After digging in the area, surface casing to a third well was found 80 feet from the creek spill area. The OSC plans to request additional funds from NPFC to begin methodically plugging the three wells in the area.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section
No information available at this time.

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
3.1 Unified Command

3.2 Cooperating Agencies
Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site
ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #2**
Special - OPA 90 Work Plan - Additional Funding Request
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 9/23/2014
Reporting Period: Sep 23 through Sep 24

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) is responding to a continuous release of crude oil along a one half mile section of Beaver Creek four miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky DEP and are being performed under the OSCs Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm four miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Friday September 19th through Monday Sep 22nd, 2014

Once access was granted by the farm owner, EPA tasked ERRs contractors to begin switching out boom previously placed by KDEP and placing hard boom as necessary to mitigate the threat of oil flowing downstream and impacting the Barren River Lake, a major recreational lake in the area. EPA working with KDEP and Kentucky Oil and Gas has located three former oil well locations, one 80 feet from where crude oil is entering the creek.

Waterways Impacted

Beaver Creek flows into Barren River Lake which is a major recreational lake in western Kentucky.

Source of Crude Oil

The OSC is confident that the source of crude oil is one of three abandoned wells along the floodplain. The OSC plans to methodically plug all three wells until the flow of crude stops. The volume of crude oil which has impacted the creek is difficult to approximate (possibly 50-150 barrels).

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

EPA currently plans on having ERRs contractor solicit oil well service subcontract bids and well and cement bond logging capability bids.

2.2.1.1 Planned Response Activities

Methodical plugging of all abandoned oil wells along the flood plain until the threat has been mitigated.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
3.1 Unified Command

3.2 Cooperating Agencies
Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site
ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #3**
Plugging of Harrison Well #2 Completed
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 10/10/2014
Reporting Period: 9/26/14 through 10/04/14

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude oil is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Monday Sep 22nd, 2014 through Friday, Sep 26th

During the beginning of the week, ERRs contractors continued switching out boom and placing hard boom as necessary to mitigate the threat of oil flowing downstream and impacting the Barren River Lake. Additional equipment and a 20,000 gallon frac tank were mobilized to the site to store wash water and to prepare for mitigating a large volume of oil/water impacting the creek during operations. ERRs successfully identified an oil well service contractor and a geophysics logging company to run cement bond logs on the identified wells.

From historical records, Kentucky Oil and Gas' Ron Norris feels the initial well to be plugged is the Harrison Farm Well No. 2 which is reported to be 600 feet deep. This well was discovered while assessing the area with the property owner on Saturday, September 20th. No surface casing was initially evident and the abandoned well was covered with soil. A strong petroleum odor was noted while assessing the condition of the creek and oil stained soil was noted at the well location. A second well approximately 200 feet from Harrison Well #2 was also located in a treeline north of the suspected well.

On Friday Sept 26th, the oil well service subcontractor set up on the well location and determined that additional trees and branches at 50-60 foot height required clearing in order to proceed safely with oil well plugging. On Saturday, Sept 27th, a temporary well head with a 7" opening was welded to the surface casing to give operators the ability to "shut the well in" in case a major blow out was encountered during "drill out" and plugging operations.

Monday, Sept 29th through Saturday, October 4th

On Monday, Sept 29th, the oil well service contractor began drilling through an initial surface obstruction at a depth of 20 feet. This appeared to be a wood plug which historically, was a typical way of plugging abandoned wells. Over the next two days, the well contractor methodically drilled through an initial wood plug and three intermittent cement plugs down to a depth of 200 feet where the driller hit a metal obstruction in the well.

On Thursday morning, October 2nd, a magnetic tool was dropped in an attempt to pull the obstruction out but it appeared to be heavily cemented in place. Metal filings were evident on the tool. Next, an impression block was dropped to identify the obstruction and a 2" pipe impression was evident on the wax block. It appeared to the well contractor that the previous operator of the well had lost a 200 to 400 foot string of 2" production pipe in the well and the decision was made to cement the production pipe in place in the mid 1980's. According to Kentucky Oil and Gas records, this well is reported to be 600 feet deep with two probable oil producing zones at 400 feet and 600 feet (Leeper formation).

Thursday afternoon, a well logging service contractor, Southern Well Wireline Services was brought in and the depth to the obstruction was determined to be 194 feet. 7" casing was evident on the cement bond log to a depth of 144 feet and a seven inch cast iron bridge plug was placed on a casing collar at 124 feet. Good cement was noted behind the casing so no casing perforations were done. After placing the cast iron bridge plug, the flow of crude oil to the surface casing level appeared to stop.

On Friday, October 3rd, the well service contractor successfully grouted the well with 200 sacks of cement. A significant amount of cement most likely flowed out at the groundwater level of the well casing because no cement flowed to the top of the surface casing at surface level.

ERRs continued switching out asorbent boom and mopping operations along the creek bank the following day. A decrease in oil sheen was very visible at levels upgradient of the well location along the creek. Sheen was still visible from areas downgradient of the well after plugging.

The OSC is unable to approximate the volume of crude oil which leaked from the well to subsurface soils and therefore, oil sheen may continue to flow from the creek bank for an extended time.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

EPA currently plans on having ERRs contractor solicit oil well service subcontract bids and well and cement bond logging capability bids.

2.2.1.1 Planned Response Activities

Methodical plugging of all abandoned oil wells along the flood plain until the threat has been mitigated.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #4**
Monitoring of Beaver Creek Spill Site Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 11/5/2014
Reporting Period: 10/04/2014 through 11/04/2014

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude oil is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Saturday October 4th through Monday November 3rd 2014

EPA and ERRs contractors have continued to monitor the left descending bank of Beaver Creek for oil sheen and crude oil over the last four weeks. ERRs contractors have continued to switch out absorbent boom and place absorbent pads along the 100 yard stretch of bank which has been impacted by the leaking abandoned well. During early October, this area of Glasgow, Kentucky received over 7 inches of rain which should have flushed the area of any residual crude oil. However, crude oil continues to flow from the area at two locations at a significant flow rate approximating 50-100 gallons per day.

Tuesday, November 4th 2014

The OSC met with EPA ERT's Greg Powell for assessment assistance to plan future operations. Powell observed that natural gas continues to also flow from the creek bank suggesting that crude oil continues to flow from a producing geological zone. Historically, this area has two producing zones of oil; one zone at approx 270 feet and a second producing zone, the Leeper formation, at 480 feet. Powell feels that an additional undiscovered well may be flowing crude oil along the creek shoreline or in the creek itself. Powell advised the OSC to conduct additional magnetometer assessment to find buried oil well casing and to also conduct soil gas studies to assess if the crude oil could be coming from one of two wells over 100 yards from the creek bank. In addition, crude oil samples will be collected and forwarded to US Coast Guards Coil Lab for fingerprinting analysis to determine the production zone.

The OSC also plans to excavate test trenches near two abandoned wells along the flood plain to assess if crude oil is leaking from these locations.

The OSC is unable to approximate the volume of crude oil which leaked from the well to subsurface soils and therefore, oil sheen may continue to flow from the creek bank for an extended time.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

EPA currently plans on having ERRs contractor solicit oil well service subcontract bids and well and cement bond logging capability bids.

2.2.1.1 Planned Response Activities

Methodical plugging of all abandoned oil wells along the flood plain until the threat has been mitigated.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #5**
Special - OPA 90 Work Plan 2 - Additional Funding Request to Continue Response
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 11/5/2014
Reporting Period: 11/05/2014

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude oil is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

An abandoned oil well located 80 feet from the spill was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank after four weeks of rain and groundwater flow to flush saturated soils around the well casing.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Wednesday, November 5th

Additional Funding is requested to continue assessment and response efforts along the creek bank of Beaver Creek three miles west of Glasgow, Kentucky. EPA ERT has also been tasked to assist the OSC in determining if additional unfound exploratory wells are in the vicinity of the creek bank with EPA START contractors. Assessment activities will include magnetometer, VLF (very low frequency), EM 31 studies, soil gas studies and crude oil fingerprinting to determine producing formation.

Funding for ERRs contractors to continue to switch out absorbent boom and pads along the 100 yard stretch of creek bank is also needed over the next two months. The OSC plans to excavate test trenches around the casing of two additional wells on the flood plain to assess wether they are leaking crude oil to the creek.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

Assessment activities to find buried abandoned wells in the vicinity of the creek bank will be conducted with EPA ERT and START contractors. Assessment activities will include magnetometer, VLF (very low frequency), EM 31 studies, soil gas studies and crude oil fingerprinting to determine producing formation. ERRs will continue creek "mopping" operation.

2.2.1.1 Planned Response Activities

Methodical plugging of all abandoned oil wells along the flood plain until the threat has been mitigated.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
3.1 Unified Command

3.2 Cooperating Agencies
Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site
ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #6**
Test Trenching to Determine Source of Crude Oil
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 12/17/2014
Reporting Period: 12/10/2014 through 12/17/2014

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude oil is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

An abandoned oil well located 80 feet from the spill was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank after four weeks of rain and groundwater flow to flush saturated soils around the well casing.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Wednesday, December 10th

In order to find the source of crude oil which continues to impact Beaver Creek, the OSC tasked ERRs to excavate test trenches near a second abandoned well 100 yards north of the Harrison #2 Well plugged in early October. A 100 foot long trench was excavated to a depth of 12-14 feet and groundwater was collected for 5 hours. There was no sign of crude oil and the trench was backfilled before the end of the day.

Thursday, December 11th, 2014

A recent metal assessment performed by START contractors indicated that a buried crude oil flow line was located near the Harrison #2 Well and ERRs began trenching operations to locate the flow lines. During this operation it became evident that crude oil was coming from the previously plugged well, most likely from a failure in the bridge plug placed at 140 feet. On Friday, December 12th, the oil well service subcontractor was mobilized and a rotary rig was brought in to start drilling through the cement plug.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Methodical plugging of all abandoned oil wells along the flood plain until the threat has been mitigated.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
3.1 Unified Command

3.2 Cooperating Agencies
Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site
ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #7**
Special - OPA 90 Work Plan 3 Additional Funding Request to Replug Well
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 12/17/2014
Reporting Period: 12/17/2014

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is most likely emanating from one of three abandoned oil wells along the flood plain. The most likely scenario is that one or more wells were improperly plugged or cemented during well closure and crude oil is communicating with groundwater levels below surface.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

An abandoned oil well located 80 feet from the spill was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank after four weeks of rain and groundwater flow to flush saturated soils around the well casing.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Thursday, December 11th, 2014

A recent metal assessment performed by START contractors indicated that a buried crude oil flow line was located near the Harrison #2 Well and ERRs began trenching operations to locate the flow lines. During this operation it became evident that crude oil was coming from the previously plugged well, most likely from a failure in the bridge plug placed at 140 feet. On Friday, December 12th, the oil well service subcontractor was mobilized and a rotary rig was brought in to start drilling through the cement plug.

Monday, Dec 15 through Wednesday, Dec 17th, 2014

The oil well service subcontractor (Barnett and Smith) began rotary rig operations and drilling through the previous cement plug. Apparently the cast iron bridge plug failed allowing oil and natural gas to "honeycomb" through the previous cementing.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue drilling through the failed cement plug and resetting a new cast iron bridge plug at a lower depth. The oil producing formation is reported to be at a depth of 600 feet (Leeper Formation) and attempts will be made to place the plug at that depth to avoid future issues.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
3.1 Unified Command

3.2 Cooperating Agencies
Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site
ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #8**
Replugging Efforts of Harrison No. 2 Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 1/16/2015
Reporting Period: 12/29/14 to 1/10/15

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

December 29th through January 9th, 2015

Based on the continuing release of crude oil to Beaver Creek and test trenching operations indicating that the crude oil continued to come from the Harrison No.2 Well plugged in early October 2014, the OSC requested additional funding from the National Pollution Fund Center (NPFC) in late December 2014 to drill out the previous cement plug and replug the well. Emphasis during this replugging effort would be centered around removing the abandoned 2" production tubing left in the well from a depth of 200 to 600 feet. Plugging operations in early October simply involved placing a cast iron bridge plug on well casing at 123 feet and cementing the well to land surface. The well log survey conducted on October 1st showed that well casing stopped at 140 feet but that the casing was properly cemented.

Operations during the week of December 29th involved having an oil well service subcontractor (Barnett and Smith) bring in a rotary drilling rig and drill out the previous cement plug and cast iron bridge plug at 123 feet.

During the week of January 5th, Barnett and Smith began milling through the abandoned 2" production tubing left at a depth of 196 feet. Efforts to lock onto the 2" tubing using an "overshot" tool were unsuccessful presumably because of debris around the 2" tubing. As the well subcontractor continued to "fish" for the 2" tubing, they continued to encounter an obstruction at approximately 30 feet. Eventually the well subcontractor was able to "fish out" the obstruction which appeared to be a bad section of the well casing presumably corroded from years of groundwater erosion. Downhole operations continued to be hampered by bad casing at 30 feet and the decision was made to procure and set smaller diameter casing (5 1/2") so that operations at 200 feet and below were not impeded.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue drilling through the failed cement plug and resetting a new cast iron bridge plug at a lower depth. The oil producing formation is reported to be at a depth of 600 feet (Leeper Formation) and attempts will be made to place the plug at that depth to avoid future issues.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 3 laborers. 1 equiment operator.
Oil Well Service Subcontractor, Barnett and Smith - 1 rig operator, 1 supervisor, 2 laborers

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #9**
Replugging Efforts of Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 1/22/2015
Reporting Period: 1/12/2015 through 1/21/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek and test trenching operations indicating that the crude continued to come from the Harrison No.2 Well plugged in early October 2014, the OSC requested additional funding from NPFC in late December 2014 to drill out the previous cement plug and replug the well. Emphasis during this replugging effort would be centered around removing abandoned 2" production tubing left in the well from a depth of 200-600 feet. Plugging operations in early October simply involved placing a cast iron bridge plug on good well casing at 123 feet and cementing the well to land surface. The well log survey conducted on October 1st showed that well casing stopped at 140 feet but that the casing was properly cemented.

January 12th through January 21st

Downhole operations continued to be hampered by bad casing at 30 feet and the decision was made to procure smaller diameter casing (5 1/2") so that operations at 200 feet and below were not impeded. Efforts to place 200 feet of 5 1/2" casing early in the week were unsuccessful again because of the corroded casing at 30 feet. The oil subcontractor worked with a local well tool supplier and ran a series of "swedges" (6", 6 1/4 " and 6 1/2 ") in an effort to open the old well casing for the 5 1/2 casing to pass the obstruction. These efforts were unsuccessful. In addition, efforts to mill through the obstruction to allow the casing to enter were also unsuccessful.

Barnett and Smith had a "casing shoe" (casing guide - see images) manufactured which was attached to the 5 1/2" casing and this effort was successful in placing 190 feet of 5 1/2 casing downhole. Since the placement of the new casing, operations again are centered on removing/ or milling through the 2" production tubing at a depth of 200 feet. The anular space around the 2" tubing appears to be filled with iron sulfide, debris and corroded casing from years of groundwater erosion. Operations include "washing down" down the anular space of the 2" tubing in an effort to remove debris and creek sediment.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue drilling through the failed cement plug and resetting a new cast iron bridge plug at a lower depth. The oil producing formation is reported to be at a depth of 600 feet (Leeper Formation) and attempts will be made to place the plug at that depth to avoid future issues.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #10**
Special - OPA 90 Work Plan 4 Additional Funding Request to Continue Replugging Efforts
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 1/22/2015
Reporting Period: 1/22/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations which could potentially be the source of crude. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, crude oil continues to flow from the creek bank.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek and test trenching operations indicating that the crude oil continued to come from the Harrison No.2 Well plugged in early October 2014, the OSC requested and received additional funding from NPFC in December 2014. Emphasis during this replugging effort would be centered around removing the abandoned 2" production tubing left in the well from a depth of 200-600 feet.

Operations during early January 2015 were hampered by bad, corroded casing at 30 feet which necessitated the purchase and placing of new 5 1/2 " casing during the week of January 12th. After some initial efforts at placing the new casing failed, the new casing was finally set on January 19th and current operations have returned to removing the 2" production tubing at a depth of 200 feet.

Additional funding is needed to continue this operation and to set a cast iron bridge plug at 600 feet, the oil producing zone.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue removal/ milling through the 2" production tubing from 200 to 600 feet and place a new cast iron bridge plug at the oil producing zone. The well will be cemented from 600 feet to land surface.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 4 laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #11**
Replugging Efforts of the Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 2/5/2015
Reporting Period: 1/22/2015 to 2/06/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) in mid January 2015 (see Polrep #10 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the removal of 2" production tubing and metal debris from 200-600 feet. The oil producing zone has been reported to be the Leeper formation at a depth of 600 feet.

Jan 22nd through Feb 6th 2015

Since additional funding from NPFC in mid Jan 2015, milling operations to remove the 2" production tubing continued. Downhole operations in January were hampered by what appeared to be a collapse in the 7" surface casing at approximately 30 feet. Several attempts to place 5 1/2" casing inside the 7" were unsuccessful and eventually a casing shoe was designed to get past the shallow obstruction (see site photos). Since the placement of 200 feet of 5 1/2 casing downhole operations have been more successful. Milling efforts initially were being performed with water but in late January, the OSC consulted with the oil well subcontractor and decided to switch to milling with drilling mud. Since this change in operations, better milling efficiency has been achieved where as much as 42 feet of tubing and metal debris has been cleared in one day.

On Feb 5th, the rig operator noted an apparent collapse in the well at 282' but was successful in milling through the collapse zone which was most likely limestone. By Friday, Feb 6th well operations had reached 335'. On Feb 6th, the well subcontractor and OSC consulted with EPA Region 4 technical advisor Chuck Eger to discuss milling progress. Eger suggested trying different types of mill bits to determine the most efficient ones to use in future ops but felt that 40 feet of milling progress per day was good progress.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue removal/ milling through the 2" production tubing from 200 to 600 feet and place a new cast iron bridge plug at the oil producing zone. The well will be cemented from 600 feet to land surface.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #12**
Replugging Efforts of the Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 2/16/2015
Reporting Period: 02/09/2015 through 02/22/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) in mid January 2015 (see Polrep #10 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the removal of 2" production tubing and metal debris from 200-600 feet. The oil producing zone has been reported to be the Leeper formation at a depth of 600 feet.

Monday, Feb 9th through Friday, Feb 13th 2015

Milling operations to remove production tubing and metal debris at the abandoned oil well continued through Friday, Feb 13th. Well milling operations extended from a depth of 335' to 444'. Milling bits are changed out every day and a half of operations to improve milling efficiency. Drilling mud continues to be used during milling operationsto increase milling efficiency and in an effort to seal subsurface oil/water pathways to Beaver Creek.

Monday, Feb 16th through Friday, Feb 20th 2015

A severe winter storm dumped 12 inches of snow on Glasgow, Kentucky on Monday, Feb 16th and wind chill temperatures through the week were forecasted to be below 0*F. The OSC consulted with ERRs response manager and the oil well service subcontractor and elected to temporarily shut down operations because of the weather.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue removal/ milling through the 2" production tubing from 200 to 600 feet and place a new cast iron bridge plug at the oil producing zone. The well will be cemented from 600 feet to land surface.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #13**
Special - OPA 90 Work Plan 5 - Additional Funding Request to continue Operations
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 2/24/2015
Reporting Period: 02/24/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) in mid January 2015 (see Polrep #10 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the removal of 2" production tubing and metal debris from 200-600 feet. The oil producing zone has been reported to be the Leeper formation at a depth of 600 feet.

Monday, Feb 9th through Friday, Feb 20th 2015

Milling operations at the Harrison No. 2 well continued over the last week. Well operations extended from a depth of 335' to 444' as of Friday, Feb 13th. Drilling mud continues to be used during milling operations in an effort to increase milling efficiency and seal subsurface oil/water pathways to Beaver Creek.

A severe winter storm dumped 12 inches of snow on Glasgow, Kentucky on Monday, Feb 16th which cancelled site operations during the week of Feb 16th.

Additional Funding Request

An additional $350,000 is being requested by the OSC to complete well plugging and site operations. The OSC plans to place an open hole cast iron bridge above the Leeper oil producing formation at a depth of 600 feet during the week of March 2nd pending Site weather conditions and the availability of a well survey company to place the plug. After placement of the plug, the well will be grouted to land surface.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue removal/ milling through the 2" production tubing from 200 to 600 feet and place a new cast iron bridge plug at the oil producing zone. The well will be cemented from 600 feet to land surface.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #14**
Replugging Efforts of Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 2/27/2015
Reporting Period: 2/23/2015 through 3/06/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) on Feb 26th (see Polrep #13 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the removal of 2" production tubing and metal debris from 200-600 feet. The oil producing zone has been reported to be the Leeper formation at a depth of 600 feet.

Monday, Feb 23rd through Saturday, Feb 28th 2015

Milling operations at the Harrison No. 2 well continued over the last week. Well operations extended from a depth of 444' to 485' as of Thursday, Feb 26th. The rotary turntable bearing went out on Thurs Feb 26th which required replacing Friday morning. Drilling mud continues to be used during milling operations in an effort to increase milling efficiency and to seal subsurface oil/water pathways to Beaver Creek.

Monday, March 2nd through Friday, March 6th 2015

After the oil well service subcontractor finished overhauling and installing the rotary turntable on Monday March 2nd, milling operations continued the following day. On Tuesday and Wednesday, milling continued to a depth of 504 feet. The Glasgow, Ky area received heavy rain on Wednesday morning which led to flash flooding and a rapid rise in Beaver Creek. This forced the ERRs crew to move support equipment around the drill rig. Later that evening temperatures dropped below freezing and one inch of sleet was followed by eight inches of snow. Operations were shut down on Thursday because of icy conditions and Friday because of freezing temperatures of 1*F.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continue removal/ milling through the 2" production tubing from 200 to 600 feet and place a new cast iron bridge plug at the oil producing zone. The well will be cemented from 600 feet to land surface.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #15**
Replugging Efforts of Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 3/26/2015
Reporting Period: 03/09/2015 through 03/26/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) on Feb 26th (see Polrep #13 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the removal of 2" production tubing and metal debris from 200-600 feet. The oil producing zone has been reported to be the Leiper formation at a depth of 600 feet.

Monday, March 9th through Friday, March 13th 2015

Milling operations at the Harrison No. 2 well continued over the last week. Well operations extended from a depth of 504' to 553' as of Friday, March 13th. Drilling mud continued to be used during milling operations in an effort to increase milling efficiency and to seal subsurface oil/water pathways to Beaver Creek.

Monday, March 16th through Friday, March 20th 2015

Milling operations at the Harrison No. 2 well continued from Monday, March 16th through Wednesday, March 18th to a depth of 604 feet. On Thursday, March 19th, Norris Environmental of Glasgow, Kentucky was subcontracted to log the well. The well log indicated four oil producing zones from 200 to 500 feet. The Leiper formation was found to be at 500 feet. (Previous information from Kentucky Oil and Gas indicated that the Leiper formation would be found at 580 feet and would be the most productive oil zone.) The Corniferous oil producing zone was found at 200 feet and according to the well log appeared to have been blasted in an effort to produce the well. The well log indicated a rather wide blast area/void from 185 to 205 feet. During all milling operations by the well subcontractor over the last six weeks, no significant increase in crude oil coming to land surface was noted between 300 to 600 feet indicating that the Coniferous zone at 200 feet appeared to be the major source of oil impacting Beaver Creek.

Monday, March 23rd through Thursday, March 26th 2015

On Monday, March 23rd, in an effort to stop crude oil from flowing from the Corniferous zone (200 feet) to landsurface (and the Beaver Creek water table), the oil well subcontractor attempted to cement 30 sacks of cement behind the 5 1/2 inch well casing at 185 feet. After a short period of time, this effort failed apparently because of the zone/formation (void) at 200 feet. On Tuesday, March 24th, the well void from 205 feet to 600 feet was filled with 50 sacks of cement. On Wednesday, March 25th, another effort was made to cement the backside (annular space) of the 5 1/2 inch well casing. First, ten sacks of drilling mud was pumped to a depth of 185 feet and circulated to land surface and then 100 sacks of cement was pumped and circulated to land surface in an effort to cement behind the 5 1/2 inch well casing. Initially this effort appeared to be successful but the following day, the 5 1/2 inch well casing was tested (easily moved with the drill rig) indicating that there was insufficient cement behind the casing. Again this indicated that the zone at 200 feet is absorbing the large amount of cement being pumped down the 5 1/2 inch well casing.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Request additional funding from NPFC to continue operations and cement the well. An additional well log will be performed on Monday, March 30th to further define the Corniferous zone and to determine an ideal zone to cement the well casing in place.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #16**
Special - OPA 90 Work Plan 6 - Additional Funding Request to continue Operations
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 3/26/2015
Reporting Period: 03/26/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) on Feb 26th (see Polrep #13 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the milling of the previous established well to 600 feet, reported to be the oil producing Leiper formation.

Monday, March 16th through Friday, March 20th 2015

Milling operations at the Harrison No. 2 well continued from Monday, March 16th through Wednesday, March 18th to a depth of 604 feet. On Thursday, March 19th, Norris Environmental of Glasgow, Kentucky was subcontracted to log the well. The well log indicated four oil producing zones from 200 to 500 feet. The Leiper formation was found to be at 500 feet. (Previous information from Kentucky Oil and Gas indicated that the Leiper formation would be found at 580 feet and would be the most productive oil zone.) The Corniferous oil producing zone was found at 200 feet and according to the well log appeared to have been blasted in an effort to produce the well. The well log indicated a rather wide blast area/void from 185 to 205 feet. During all milling operations by the well subcontractor over the last six weeks, no significant increase in crude oil coming to land surface was noted between 300 to 600 feet indicating that the Coniferous zone at 200 feet appeared to be the major source of oil impacting Beaver Creek.

Monday, March 23rd through Thursday, March 26th 2015

On Monday, March 23rd, in an effort to stop crude oil from flowing from the well to landsurface (and the Beaver Creek water table), the oil well subcontractor attempted to cement 30 sacks of cement behind the 5 1/2 inch well casing at 185 feet. After a short period of time, this effort failed, apparently because of the zone/formation (void) at 200 feet. On Tuesday, March 24th, the well void from 205 feet to 600 feet was filled with 50 sacks of cement. On Wednesday, March 25th, another effort was made to cement the backside (annular space) of the 5 1/2 inch well casing. First, ten sacks of drilling mud was pumped to a depth of 185 feet and circulated to land surface and then 100 sacks of cement was pumped and circulated to land surface in an effort to cement behind the 5 1/2 inch well casing. Initially this effort appeared to be successful but the following day, the 5 1/2 inch well casing was tested (easily moved with the drill rig) indicating that there was insufficient cement behind the casing. Again this indicated that the zone at 200 feet is absorbing the large amount of cement being pumped down the 5 1/2 inch well casing.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

This OPA 90 Work Plan is a formal request for additional funding from NPFC to continue operations and cement the well. Currently, the OSC plans to log the well again on Monday, March 30th to further define the geological formation between 150 to 200 feet, the Corniferous zone. This will assist in determining an ideal location to set a cast iron bridge plug and to determine a zone ideal for cementing the 5 1/2 well casing. It may be necessary to raise the casing out of the bore hole to find a zone (shale layer) which will accept enough cement to seal the well casing in place and eventually seal the well.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Beaver Creek Bridge Crude Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #17**
Replugging Efforts of Abandoned Oil Well Continues
Beaver Creek Bridge Crude Oil Spill

Glasgow, KY
Latitude: 36.9914130 Longitude: -85.9861300

To:
From: Perry Gaughan, OSC
Date: 3/31/2015
Reporting Period: 3/27/2015 to 4/10/2015

1. Introduction

1.1 Background

Site Number:	Z4ZB	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/19/2014	**Start Date:**	9/19/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14459	**Reimbursable Account #:**	

1.1.1 Incident Category

Region 4 Emergency Response and Removal Branch (ERRB) responded to a continuous release of crude oil along a one half mile section of Beaver Creek three miles west of Glasgow, Kentucky. Response efforts were initially requested by Kentucky Dept Environmental Protection (KDEP) and are being performed under the OSC's Oil Pollution Act authority.

1.1.2 Site Description

The spill Site is along the flood plain of a 50 acre farm three miles west of Glasgow. Crude oil continues to emanate from a creek bank into a 100 yard section of Beaver Creek in a remote section of the creek. Approximately a one half mile stretch of the creek has been impacted. The spill is located immediately south of a recent interchange construction by Kentucky DOT along the Louie B. Nunn Expressway between Interstate 65 and Glasgow, Ky.

1.1.2.1 Location

The spill is located along Beaver Creek on a 50 acre farm along State Route 1297 where it runs under the Louie B. Nunn Expressway.

1.1.2.2 Description of Threat

The crude oil release is emanating from the Harrison No. 2 abandoned oil well 80 feet from Beaver Creek. There are two additional abandoned oil wells on the flood plain but test trenching operations conducted in December of 2014 confirmed the source as the Harrison No. 2 well. According to Kentucky Oil and Gas, this well was most likely improperly plugged in the mid 1980's.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA working with Kentucky DEP and the property owner has located three former well locations along the Harrison flood plain adjoining Beaver Creek east of Glasgow. Kentucky DOT has recently built an interchange on the L. Nunn Expressway on an 8 acre parcel of the farm upgradient of the creek.

The Harrison No. 2 well was initially uncovered and cemented on October 3rd by EPA and ERRs contractors (reference Polrep #3). However, test trenching operations near the well in December 2014 indicated that oil was continuing to flow from the well. Based on the latest well operations during Feb 2015, the cast iron bridge plug placed on Oct 1st 2014 was most likely set on bad, corroded casing which resulted in the plugging failure.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on the continuing release of crude oil to Beaver Creek, the OSC requested and received additional funding from the National Pollution Fund Center (NPFC) on March 27th (see Polrep #16 OPA 90 Funding Request). Emphasis during the most current replugging operation were centered around the milling of the previous established well to 600 feet, reported to be the oil producing Leiper formation.

Monday, March 23rd through Thursday, March 26th 2015

On Monday, March 23rd, in an effort to stop crude oil from flowing from the well to landsurface (and the Beaver Creek water table), the oil well subcontractor attempted to cement 30 sacks of cement behind the 5 1/2 inch well casing at 185 feet. After a short period of time, this effort failed, apparently because of the zone/formation (void) at 200 feet. On Tuesday, March 24th, the well void from 205 feet to 600 feet was filled with 50 sacks of cement.

On Wednesday, March 25th, another effort was made to cement the backside (annular space) of the 5 1/2 inch well casing. First, ten sacks of drilling mud was pumped to a depth of 185 feet and circulated to land surface and then 100 sacks of cement was pumped and circulated to land surface in an effort to cement behind the 5 1/2 inch well casing. Initially this effort appeared to be successful but the following day, the 5 1/2 inch well casing was tested (easily moved with the drill rig) indicating that there was insufficient cement behind the casing. Again this indicated that the zone at 200 feet is absorbing the large amount of cement being pumped down the 5 1/2 inch well casing.

Monday, March 30th through Friday, April 3rd 2015

On Monday March 30th, it was determined that some cement did set up behind the 5 1/2 casing and a well log/cement bond log was run to determine the amount/degree of cement behind casing. The cement bond log showed 4-5 feet of cement behind the casing at 181 feet. On Tuesday March 31st, the decision was made to incrementally add sufficient cement in an effort to stop oil flow from the Corniferous Zone and force cement up the backside of the 5 1/2 casing. 80 sacks of cement was run downhole in a continuing attempt to squeeze cement behind the casing while ceiling off the oil producing zone.at 200 feet. (80 sacks of cement represents an approximate volume of 19,200 gallons of cement mix or 80 sacks with 240 gallons of water per sack/ 6 barrels of water).

On Wednesday, April 1st an additional 80 sacks of cement (19,200 gallons of grout mix) was pumped downhole into the oil producing zone. On Thursday April 2nd, a cement bond log was run again and the total depth was determined to be 155 feet. A cast iron bridge plug was set at 154 feet and the well was perforated at 146 feet to squeeze cement behind the well casing. An additional 80 sacks of cement was forced down hole and cement was noted at land surface from the backside of the 5 1/2 casing, the desired goal. Strong thunderstorms were expected Thursday evening and support equipment was moved to higher grounds in anticipation of the flood plane being flooded again. On Friday, April 3rd, the oil well service contractor checked the backside of the 5 1/2 casing and found that cement was still present indicating an apparent good cementing of the well. Cementing efforts were allowed to cure over

the weekend.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC is working with Kentucky Oil and Gas in identifying previous drillers in the area. Once identified, EPA will pursue normal responsible party liability and request plugging records by operators. Wells in this area of Kentucky date back to 1930's to 1940's. Wells in an area of Boyds Creek less than ten miles from this site date back to 1865 (Civil War).

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

EPA will continue to monitor the creek to determine if the well closure was successful.

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Kentucky DEP, Kentucky Oil and Gas, Kentucky DOT

4. Personnel On Site

ERRs (CMC Inc.) - 1 response manager, 1 equipment operator, 3 laborers.
Barnett and Smith (Oil well service subcontractor) - 1 rig operator/ supervisor, 2 oil rig laborers.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.